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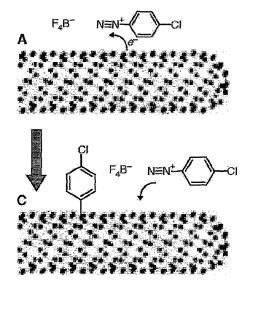
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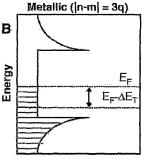
61821 (US). DYKE, Christopher A. [US/US]; 19611 Spoonwood Dr., Humble, TX 77346 (US). TOUR, James M. [US/US]; 4625 Spruce Street, Bellaire, TX 77401 (US). KITTRELL, W. Carter [US/US]; 2400 North Braeswood, No. 215, Houston, TX 77030 (US). HAUGE, Robert H. [US/US]; 4031 Turnberry Circle, Houston, TX 77025 (US). SMALLEY, Richard E. [US/US]; 1816 Bolsover Street, Houston, TX 77005 (US).

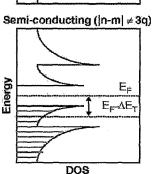
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(54) Title: SELECTIVE FUNCTIONALIZATION OF CARBON NANOTUBES







(57) Abstract: The present invention is directed toward methods of selectively functionalizing carbon nanotubes of a specific type or range of types, based on their electronic properties, using diazonium chemistry. The present invention is also directed toward methods of separating carbon nanotubes into populations of specific types or range(s) of types via selective functionalization and electrophoresis, and also to the novel compositions generated by such separations.

WO 2005/012172 A3



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A. CLASSIFICATION OF SUBJECT MATTER C08K9/08 C09C1/44 C09C1/56 D01F11/14 C01B31/02 According to International Patent Classification (IPC) or to both national classification and IPC **B. FIELDS SEARCHED** Minimum documentation searched (classification system followed by classification symbols) CO9C CO1B Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal, CHEM ABS Data C. DOCUMENTS CONSIDERED TO BE RELEVANT Citation of document, with indication, where appropriate, of the relevant passages Relevant to claim No. 1,2,4-12 WO 02/060812 A (WILLIAM MARSH RICE χ UNIVERSITY; TOUR, JAMES, M; BAHR, JEFFREY, L; YANG,) 8 August 2002 (2002-08-08) cited in the application 3 page 10, line 8 - line 29 Υ page 15, line 6 - line 35 claims 1,2,4-63 KRUPKE R ET AL: "Separation of metallic Υ from semiconducting single-walled carbon nanotubes" SCIENCE, AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE,, US, vol. 301, no. 5631, 18 July 2003 (2003-07-18), pages 344-347, XP002339479 ISSN: 0036-8075 the whole document -/--Further documents are listed in the continuation of box C. Patent family members are listed in annex. Special categories of cited documents: 'T' later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the "A" document defining the general state of the art which is not considered to be of particular relevance invention earlier document but published on or after the international "X" document of particular relevance; the claimed invention filing date cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the citation or other special reason (as specified) document is combined with one or more other such doc "O" document referring to an oral disclosure, use, exhibition or ments, such combination being obvious to a person skilled in the art. document published prior to the international filing date but later than the priority date claimed "&" document member of the same patent family Date of mailing of the international search report Date of the actual completion of the international search 17/01/2006 11 January 2006 Authorized officer Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016 Siebel, E

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